

U.S. Patent Application No. 10/660,110  
Amendment dated October 2, 2008  
In Response to Office Action Mailed July 9, 2008

**REMARKS**

Continued examination and favorable reconsideration are respectfully requested.

Claims 20, 23-34, and 36-55 remain pending in the application and claims 1-19, 21-22 and 35 were previously canceled without prejudice or disclaimer. By this Amendment, claims 20, 25, 27, 28, 33, 36, 40, 45, 47, 48, and 51 have been amended. Support for the amended claims can be found throughout the application as originally filed, for example, at least in paragraphs [0058] – [0065], particularly paragraph [0065], of corresponding Patent Application Publication No. US 2005/0059017 A1. No new matter has been added.

**Rejection of Claims 20, 23-24, 33-34, 36, and 45-47 Under 35 U.S.C. §103(a)**

At page 4 of the Office Action, claims 20, 23-24, 33-34, 36, and 45-47 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Savory et al. (Clinical Chemistry, volume 14, 1968, pages 132-144), in view of Chen et al. (Genome Research, 1998, volume 8, pages 549-556). For the reasons set forth below, Applicants respectfully traverse this rejection.

Each of independent claims 20, 33, and 45 features a method for extending the dynamic range of a photodetector, comprising performing a first measurement of identifiable signals such that the photodetector yields a first output signal representing an abundance of a first type of particles, wherein the photodetector is configured in a first configuration. Each of these claims further recites performing a second measurement of identifiable signals such that the photodetector yields a second output signal representing an abundance of the first type of particles, wherein the photodetector is configured in a second configuration. The method also determines that the first output signal falls outside of the dynamic range of the photodetector in the first configuration, and then combines the first and second measurements of the identifiable signals and determines a scaled

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representation of the first output signal at the first configuration. Independent claims 20, 33, and 45 now even further emphasize that the first output signal represents an output signal that is not within the dynamic range of the photodetector when configured in the first configuration. The claimed method is very different from what is described in Savory et al. and Chen et al.

Savory et al. describes a procedure for determining the amount of ethanol in a serum. Savory et al. describes the use of a hydrogen flame ionization detection system and has nothing to do with a photodetector. A photodetector is presently featured in claims 20, 33, and 45. At page 5 of the Office Action, the Examiner asserts that FIG. 5 of Savory et al. teaches two different graphed configurations, where some of the peaks in the first configuration would be out of the dynamic range of the detector in the second configuration, as is featured in claim 20. This assertion is incorrect. Each of peaks A-F is detected at the first configuration (75 ml per min helium flow) and at the second configuration (45 ml per min helium flow).

The photodetector recited in present claim 20 has two configurations. To further clarify these two configurations, Applicants have amended claim 20 to recite that the scaled first output signal would not have been within the dynamic range of the photodetector at the first configuration. The Examiner's statement that Savory et al. achieves this feature is incorrect. As can be seen in FIG. 5 of Savory et al., a first measurement of the evaporation is taken (top graph), and a second measurement of evaporation is taken (bottom graph), where the flow rate of the helium carrier gas in the procedure, has been decreased. Although the measurements are taken under different conditions, the hydrogen-flame ionization detection system was able to make a detection of both signals at both configurations. Moreover, Savory et al. fails to teach or suggest taking the second measurement and applying it to the first measurement. Savory et al. does not resolve anything at the slower speed that would not have been readable at the faster speed. Accordingly, Savory et al. fails

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to teach the features of claim 20.

Chen et al. describes combining dye-labeled oligonucleotide ligation and fluorescence resonance energy transfer detection. Chen et al., however, fails to cure the deficiencies of Savory et al. with respect to present independent claims 20, 33, and 45, because, *inter alia*, Chen et al. fails to teach or suggest a method of extending the dynamic range of a photodetector. Chen et al. fails to teach or suggest a method of combining a first measurement at a first configuration of a photodetector, which yields a first output signal, with a second measurement at a second configuration of the same photodetector, which yields a second output signal. Chen et al. also fails to teach or suggest a method to determine a scaled representation of a first output signal, wherein the scaled representation of the first output signal represents an output signal that was not within the dynamic range of the photodetector in a first configuration. Accordingly the rejection of claims 20, 33, and 45, is deemed to be overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

Furthermore, it would neither have been obvious to nor predictable for one skilled in the art to combine the teachings of Savory et al. with the teachings of Chen et al. As will be appreciated, Savory et al. describes a system of detecting the evaporation of a chemical using a hydrogen-flame ionization detection system (*see*, page 142, lines 10-13). Chen et al. describes a system for detecting polymerase chain reaction, using a fluorescence spectrophotometer (*see*, p. 550, left-hand column, lines 11-15). The Examiner has pointed out nothing in the references that provides a motivation to combine such teachings. Moreover, gas chromatography detection and the hydrogen-flame ionization detection system are not from the same field of endeavor as PCR detection and the use of a spectrophotometer. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

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Each of claims 23-24 depends from claim 20. Each of claims 34 and 36 depends from claim 33. Each of claims 46-47 depends from claim 45. In view of this, the rejection of claims 23-24, 34, 36, and 46-47 is deemed to be overcome for at least the same reasons that the rejection of claims 20, 33, and 45 is deemed to be overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

**Rejection of Claims 28-29, 40-41, and 51-52 Under 35 U.S.C. §103(a)**

At page 7 of the Office Action, claims 28-29, 40-41, and 51-52 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Savory et al., in view of Chen et al., and further in view of Tomlinson et al. (Electrophoresis, 1994, volume 15, pages 62-71). For the reasons set forth below, Applicants respectfully traverse this rejection.

Tomlinson et al. describes an investigation of drug metabolism using capillary electrophoresis with photodiode array detection and online mass spectrometry equipped with an array detector. Tomlinson et al., however, fails to cure the deficiencies of Savory et al. and Chen et al. with regard to claims 20, 33, and 45, at least because Tomlinson et al. fails to teach or suggest a method of combining a first measurement at a first configuration of a photodetector, which yields a first output signal, with a second measurement at a second configuration of the photodetector, which yields a second output signal, to determine a scaled representation of the first output signal, and more particularly wherein the scaled representation of the first output signal represents an output signal that was not within the dynamic range of the photodetector in the first configuration. Thus, claims 20, 33, and 45 are deemed to be allowable over Savory et al., Chen et al., and Tomlinson et al., even if such a combination were proper.

Each of claims 28-29 depends from claim 20, each of claims 40-41 depends from claim 33,

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and each of claims 51-52 depends from claim 45. In view of this, claims 28-29, 40-41, and 51-52 are deemed to be allowable for at least the same reasons that claims 20, 33, and 45 are deemed to be allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

**Rejection of Claims 31-32, 43-44, and 54-55 Under 35 U.S.C. §103(a)**

At page 8 of the Office Action, claims 31-32, 43-44, and 54-55 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Savory et al., in view of Chen et al., in view of Tomlinson et al., and further in view of *Photomultiplier Tubes* (Hamamatsu Brochure, pages 1-15, July 2002). For the reasons set forth below, Applicants respectfully traverse this rejection.

*Photomultiplier Tubes* describes the use of photomultiplier tubes. *Photomultiplier Tubes*, however, fails to cure the deficiencies of Savory et al., Chen et al., and Tomlinson et al. with regard to claims 20, 33, and 45, at least because *Photomultiplier Tubes* fails to teach or suggest a method of combining a first measurement at a first configuration of a photodetector, which yields a first output signal, with a second measurement at a second configuration of the photodetector, which yields a second output signal, to determine a scaled representation of the first output signal, and more particularly wherein the scaled representation of the first output signal represents an output signal that was not within the dynamic range of the photodetector in the first configuration. Thus, claims 20, 33, and 45 are deemed to be allowable over Savory et al., Chen et al., Tomlinson et al., and *Photomultiplier Tubes*, even if such combination were proper.

Each of claims 31-32 depends from claim 20, each of claims 43-44 depends from claim 33, and each of claims 54-55 depends from claim 45. In view of this, claims 31-32, 43-44, and 54-55 are deemed to be allowable for at least the same reasons that claims 20, 33, and 45 are deemed to be allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

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**Rejection of Claims 30, 42, and 53 Under 35 U.S.C. §103(a)**

At page 10 of the Office Action, claims 30, 42, and 53 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Savory et al., in view of Chen et al., in view of Tomlinson et al., in view of *Photomultiplier Tubes*, and further in view of Priebe (19<sup>th</sup> Annual Symposium of Frequency Control, 1965, pages 487-508). For the reasons set forth below, Applicants respectfully traverse this rejection.

Priebe describes attenuation and resistance measurements of unwanted modes of quartz crystals. Priebe, however, fails to cure the deficiencies of Savory et al., Chen et al., Tomlinson et al., and Photomultiplier Tubes with regard to claims 20, 33, and 45, at least because Priebe also fails to teach or suggest a method of combining a first measurement at a first configuration of a photodetector, which yields a first output signal, with a second measurement at a second configuration of the photodetector, which yields a second output signal, to determine a scaled representation of the first output signal, and particularly wherein the scaled representation of the first output signal represents an output signal that was not within the dynamic range of the photodetector in the first configuration. Thus, claims 20, 33, and 45 are deemed to be allowable over Savory et al., Chen et al., Tomlinson et al., *Photomultiplier Tubes*, and Priebe, even if such combination were proper. Claim 30 depends from claim 20, claim 42 depends from claim 33, and claim 53 depends from claim 45. In view of this, claims 30, 42, and 53 are deemed to be allowable for at least the same reasons that claims 20, 33, and 45, respectively, are deemed to be allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

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**Rejection of Claims 25-26, 37-38, and 48-49 Under 35 U.S.C. §103(a)**

At page 11 of the Office Action, claims 25-26, 37-38, and 48-49 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Savory et al., in view of Chen et al., in view of Tomlinson et al., and further in view of Tacklind et al. (U.S. Patent Application Publication No. US 2003/0101605 A1). For the reasons set forth below, Applicants respectfully traverse this rejection.

Tacklind et al. describes a servo-controlled automatic level and plumb tool. Tacklind et al., however, fails to cure the deficiencies of Savory et al., Chen et al., and Tomlinson et al. with regard to claims 20, 33, and 45, at least because Tacklind et al. also fails to teach or suggest a method of combining a first measurement at a first configuration of a photodetector, which yields a first output signal, with a second measurement at a second configuration of the photodetector, which yields a second output signal, to determine a scaled representation of the first output signal, particularly wherein the scaled representation of the first output signal represents an output signal that was not within the dynamic range of the photodetector in the first configuration. Thus, claims 20, 33, and 45 are deemed to be allowable over Savory et al., Chen et al., Tomlinson et al., and Tacklind et al., even if such combination were proper. Each of claims 25-26 depends from claim 20, each of claims 37-38 depends from claim 33, and each of claims 48-49 depends from claim 45. In view of this, claims 25-26, 37-38, and 48-49 are deemed to be allowable for at least the same reasons that claims 20, 33, and 45 are deemed to be allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

**Rejection of Claims 27, 39, and 50 Under 35 U.S.C. §103(a)**

At page 13 of the Office Action, claims 27, 39, and 50 are rejected under 35 U.S.C. §103(a)

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as allegedly being unpatentable over Savory et al., in view of Chen et al., in view of Tomlinson et al., in view of Tacklind et al., and further in view of Pierre et al. (IEEE Acoustics, Speech, and Signal Processing, 1995, pages 1900-1903) . For the reasons set forth below, Applicants respectfully traverse this rejection.

Pierre et al. describes a procedure for the autocalibration of quadrature receivers. Pierre et al., however, fails to cure the deficiencies of Savory et al., Chen et al., Tomlinson et al., and Tacklind et al. with regard to claims 20, 33, and 45, at least because Pierre et al. also fails to teach or suggest a method of combining a first measurement at a first configuration of a photodetector, which yields a first output signal, with a second measurement at a second configuration of the photodetector, which yields a second output signal, to determine a scaled representation of the first output signal, particularly wherein the scaled representation of the first output signal represents an output signal that was not within the dynamic range of the photodetector in the first configuration. Thus, claims 20, 33, and 45 are deemed to be allowable over Savory et al., Chen et al., Tomlinson et al., Tacklind et al., and Pierre et al. Claim 27 depends from claim 20, claim 39 depends from claim 33, and claim 50 depends from claim 45. In view of this, claims 27, 39, and 50 are deemed to be allowable for at least the same reasons that claims 20, 33, and 45, respectively, are deemed to be allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

## CONCLUSION

In view of the foregoing remarks, Applicants respectfully request favorable reconsideration of the present application and a timely allowance of the pending claims.

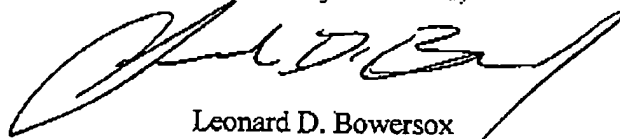


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Should the Examiner deem that any further action by Applicants or Applicants' undersigned representative is desirable and/or necessary, the Examiner is invited to telephone the undersigned at the number set forth below.

If there are any other fees due in connection with the filing of this response, please charge the fees to deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,



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